



# A ppalachian

## HARDWOODS

**Appalachian Hardwood Manufacturers, Inc.**  
*(An Association Serving the Appalachian Hardwood Producing Area)*

414 Walnut Street  
Cincinnati 2, Ohio





*Appalachian Mountains*

## A P P A L A C H I A N   H A R D W O O D S

Beautiful and rugged mountains cover the APPALACHIAN hardwood region. On these timbered hills grow the fine stands of APPALACHIAN hardwoods from which many quality wood products are made.

APPALACHIAN is not a trade name. It describes high quality hardwoods of fine grain, uniform texture and distinctive character. Here in the Appalachian region abundant rainfall, good soil and mountainous topography create a condition well suited to the growing of quality timber, for which the area is justly famous. Therefore, rather than a trade name, APPALACHIAN designates quality.

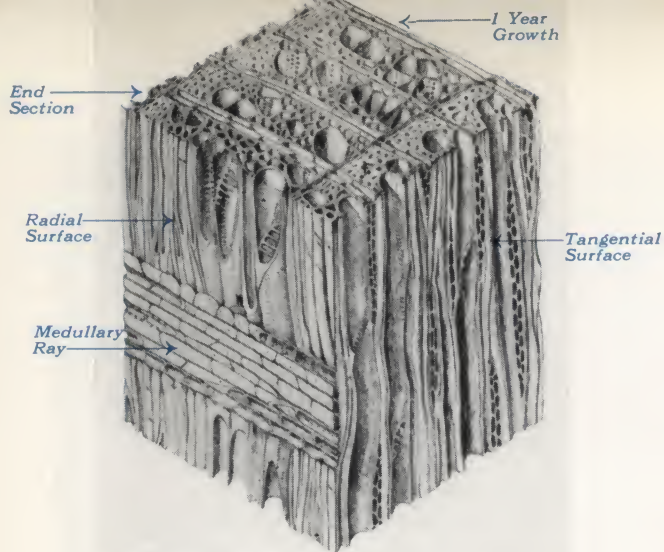
Wood is our only *renewable* natural resource. It grows abundantly on over two-thirds of the land area of the APPALACHIAN hardwood region. It is a product of nature, and has many properties found in no other product. The knots, bird pecks, and other features found in some of the wood, impart character which when properly used, lend warmth and beauty to the wood and its surroundings.

### THE APPALACHIAN HARDWOOD REGION

For many years after the settlement of the coastal plain the APPALACHIAN Mountains were the Far West. Until the discovery of Cumberland Gap in 1750 few pioneers attempted to cross the rugged mountain ranges. The Wilderness Road was built through the Gap in 1779 and a steady stream of settlers then crossed the mountains. However, few people stopped to settle in the APPALACHIAN region. Most continued on to the low rolling hills and river bottoms lands of Central Kentucky and beyond.

The results of this migration can be seen in the timber stands of today, and is typical of similar areas throughout the nation. When one views the forested areas of the country, the dominating factors of the past are readily evident. Where the lumbermen dominated the economy, vast areas of forest land containing millions of feet of saw timber still cover the greater part of the area. Where





*Highly magnified section of a block of wood  
(Yellow Poplar) U. S. Department of Agriculture*

agriculture has been the dominating factor, the land has been necessarily cleared for farm crops and pasture and little forest land remains.

In the APPALACHIAN region, which is not well suited to agriculture, except in some of the river bottoms and fringe areas, timber operations have been an important segment of the economy for many years. Today forests cover about two-thirds of the area and continue to support important forest industries. Cutting has not destroyed the forest.

In the APPALACHIAN hardwood region intensive development of the logging industry started in the late 1800's. A mature crop was rapidly harvested to meet the demands of a young and expanding country.

However, another crop grew up following cutting and we are now growing trees for our needs, and the practice of forestry has had widespread development in the APPALACHIAN region, as well as in many other parts of the country. Utilization of the available timber through the use of modern equipment and operating methods is now much closer than was formerly economically possible.

Of the thirty-six states which are now members of the Tree Farm Program, seven are in the APPALACHIAN hardwood region.

A "Tree Farm" is a forest which has been certified by a professional forester as an area on which the trees are being properly cut, and is dedicated to continuous production of timber through good forestry practices. The number of "Tree Farms" and the acreage they represent is steadily increasing each year. Over the APPALACHIAN region as a whole, saw timber is being harvested at the rate of about 75% of its growth. The continuous production of APPALACHIAN hardwood lumber is assured.

## TREES . . . AND HOW THEY GROW

Trees are some of the world's largest plants. How do they grow, reproduce, and make wood, a product so useful to the welfare of man?

Trees start to grow from one of two sources, from seeds or from sprouts from an old stump. Each year a tree produces seeds but in some years at more or less regular intervals more than the usual number of seeds are produced. These are called seed years. Some seeds such as the acorn of the red oak require two years to mature, but most seeds ripen in one year. Some trees like the white ash have the male and female flowers on separate trees. Some seeds mature in the spring, others in early summer, while still others are not ripe until early fall.

In any case, the seed after reaching maturity falls to the ground, and when suitable conditions of temperature and moisture are found starts to grow. Until the young tree produces roots and leaves it lives on the food stored in the seed. First the part of the seed that will produce the roots, sprouts and grows down into the soil in search of water. Next the branches start to form and grow upward in search of sunlight. Then the leaves begin to form. Thereafter the young tree is on its own.

Root hairs develop on the roots and through these the tree absorbs food consisting of minerals taken from the soil in solution. This food is carried upward through

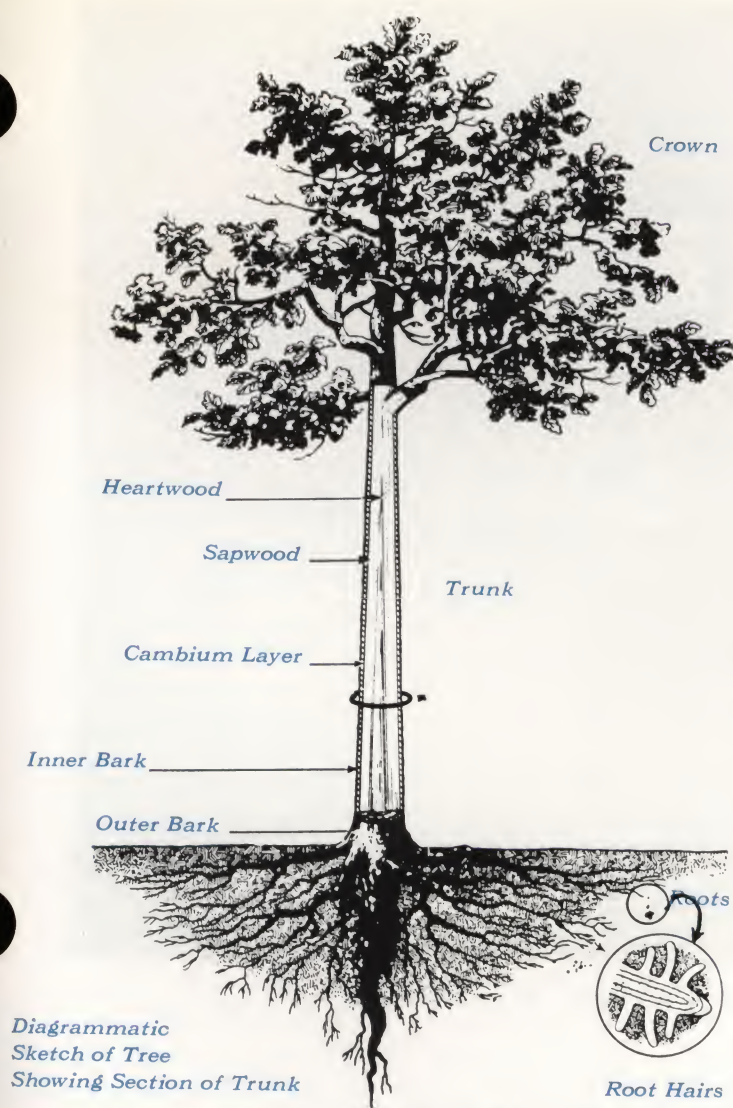


*Virgin timber  
Appalachian  
Hardwoods*

*Young second growth Appalachian Hardwoods*







the sapwood of the tree; feeding the tree as it goes; and finally up into the leaves. Here a large amount of the water is evaporated through a process called transpiration. On a warm day in summer a large tree may transpire as much as 2000 gallons of water.

The leaves of the tree are a chemical laboratory in that they absorb water vapor and carbon dioxide from the air and in the presence of sunlight and the chlorophyll in the leaves, manufacture starches and sugars which the tree also uses for food. This food is carried down the tree in the inner bark, and furnishes nourishment for the branches, the trunk and the roots.

A tree grows in two directions only, outward from the trunk, through the growth of the cells in the cambium layer, and upward from the tips of the branches and downward from the ends of the roots. A mark, placed on the trunk of a tree four feet above the ground, will remain at that height throughout the life of the tree.

You have probably heard that a tree makes a ring every year. This is true. You can tell how old a tree was by counting the rings between the center and the outer

edge of the wood in a stump of a cut tree. A tree grows in two seasons. In the spring when growth is starting the tree needs large amounts of water. Therefore, the pores in the wood are usually larger than later on in the summer when so much water is not used. During the summer the tree is growing wood for strength. In the APPALACHIAN region the cell walls of the wood are relatively thin. This characteristic give APPALACHIAN hardwood the property of staying put, as it does not shrink and swell as much as hardwoods with thicker cell walls.

During the growth of the tree, cells are developed in what are called rays. These radiate out from the center of the tree and are food storage cells. The food in these cells is used by the tree in starting to grow in the spring until the leaves are formed. Then the growing process starts over again.

As a tree grows it produces not only clear lumber but also develops natural markings that give wood character, warmth and beauty. Knots, bird pecks, worm holes and other typical properties are imparted to wood by nature and give it character found in no other product. Wood is often imitated, but its warmth and beauty are never duplicated.

As a tree grows only the inner bark, the cambium layer and the sapwood remain alive. The heartwood becomes dead and gives the tree strength. The outer bark dies and gives the tree protection from fire, insects, and disease.

## PROPERTIES AND USES OF APPALACHIAN HARDWOODS

APPALACHIAN timber produces high quality wood which is fine grained and uniform in texture. In the home it is used in furniture, flooring, interior trim, paneling, weather boards, window frames, and doors. Industrial uses include truck bodies, wooden ships, specialty products, such as bowling pins, woodenware and toys, farm implements, handles, auto bodies and many others.

The inherent properties of APPALACHIAN hardwoods are also well adapted to use in manual training courses.

While there are some thirty species of hardwood trees in the APPALACHIAN region, white oak, red oak, chestnut oak, yellow poplar, basswood, hard maple, yellow birch, beech, cherry, and white ash are the most important commercially.

The climate and soil with a high nitrogen content make excellent growing conditions which produce the fine grain and uniform texture of APPALACHIAN hardwoods. The properties make the wood easy to work and make it "stay put" when placed in use. When the characteristics imparted by nature are properly used, warmth and beauty are created in paneling, flooring and furniture and interior trim. The user has an excellent opportunity to put his own ideas and personality into his work when he uses wood containing knots, bird-pecks, streaks, and other natural markings.





*Appalachian Sugar Maple Natural Marked Paneling — Warm and Homey*

## APPALACHIAN SUGAR OR HARD MAPLE

Several species of Maple grow in the eastern part of the United States. In the APPALACHIAN region the most important, both from a volume and quality standpoint, is the sugar or hard maple known botanically as *Acer saccharum*. On the deep well-drained soils of the APPALACHIAN hardwood region hard maple makes excellent growth. In early logging operations, few hard maple trees were cut. Therefore, many large trees with a high percentage of the white sapwood, so much in demand on the hard maple market, are now growing in the timber stands of the APPALACHIAN region. The excellent properties of hard maple so desirable in many wood products are now well recognized and hard maple is cut along with other species in the stand.

In some sections of the country an important by-product of the hard maple tree is maple syrup and maple sugar. The trees are "tapped" in early spring by boring a one-half inch hole into the trunk, inserting a metal spout and collecting the flow of sap in a bucket. By boiling about 30 gallons of sap, a gallon of syrup, or

8 pounds of sugar can be made. A single tree will produce, in a single season, enough sap to make a gallon of syrup.

The wood of hard maple is diffuse, porous, and its rays are numerous but small. The heartwood is a light reddish brown color while the sapwood is almost white. APPALACHIAN hard maple is very dense, hard and strong. As a result of accidental growth phenomena, occasional hard maple trees will produce unusually beautiful grain effects commonly known as birds-eye, curly, and blister maple, which are greatly prized by the manufacturers of furniture and musical instruments.





The fine grain and uniform texture of APPALACHIAN hard maple are properties which make it an excellent wood for turning on a lathe. It is very resistant to abrasive wear, it takes a very high polish, and ranks very high in nail and screw holding ability.

These properties make it an excellent wood for furniture and flooring, and it is unsurpassed for shoe lasts and wooden heels; bowling pins, toys, sporting goods, rollers and many other similar products.

Abrasive tests of hard maple for flooring made by several laboratories have demonstrated that APPALACHIAN hard maple flooring is second to none in resistance to wear and serviceability as a flooring material.

#### COMPARATIVE WEARING QUALITIES OF SEVERAL FLOORING MATERIALS

Flooring Materials Tested	Average Loss Due to Abrasion	Indentation Test
Vitreous Tile.....	4.57	0
Neat Portland Cement.....	16.79	0
Rubber.....	20.59	4.0
Marble.....	23.18	0
Hard Maple.....	23.79	0
Cork Tile.....	45.93	26.7
Oxychloride Cement.....	50.10	0
Linoleum.....	56.67	13.6
Asphaltic Composition.....	80.11	61.9

APPALACHIAN hard maple possesses a high degree of shock resistance and nail holding ability which qualities make it an excellent wood for the manufacture of boxes and crates used in shipment of heavy material. This use accounts for about 25% of the production of hard maple.

Hard maple does not have a distinct grain pattern except as a result of the growth phenomenon mentioned above. However, it does have a simple homey beauty well adapted to the modern trend in furniture demand. About 20% of the production of APPALACHIAN hard maple is used in the manufacture of fine modern furniture.

Like other APPALACHIAN hardwoods, hard maple can also impart character to the products for which it is used. One natural property imparted by nature to maple is mineral streaks. While clear APPALACHIAN hard maple has beauty of appearance, natural markings in the wood give an opportunity for more diversified design, balance with surroundings and expression of personality of the maker.

Bookends, coffee tables, and other small items made by the manual training student, can be things of outstanding beauty and character when he takes advantage of the inherent natural properties and markings found in wood.



*Appalachian Hardwoods are well adapted to all rooms in the home. Wood Cabinets beautify the Kitchen. Sugar Maple, Yellow Birch and others afford outstanding beauty.*



*Appalachian Hardwoods are popular with the manual training student.*





*Natural markings  
enhance the  
beauty of this  
random width plank  
Chestnut Oak floor*

## APPALACHIAN OAK

The many species of oak found throughout the eastern part of the United States can be divided into two groups: the white oaks and the red oaks, each with its distinguishing characteristics.

### CHARACTERISTICS OF THE TREES

In the white oak group the bark is usually gray in color and somewhat flaky, in the red oaks the bark is darker, roughly fissured and tight.

The leaves in both groups are usually lobed, but in the white oak group the tip of the lobe is smooth, in the red oaks it has a little bristle on the tip.

On the red oak tree the acorns are usually smaller than the white oak and require two years to mature. The white oak acorns mature in one year and some are edible.

### CHARACTERISTICS OF THE WOOD

The distinguishing features of white oak and red oak wood lie mainly in the grain pattern and color. Red oak usually has a relatively pronounced grain and distinctly reddish color. White oak is relatively fine-grained and gray to tan in color. Other indentifying characteristics can be determined through a close examination of the wood.

1. With a sharp knife cut away a portion of the *end grain* of a piece of oak in question, thus exposing the pores in the growth rings. If the pores when seen under a 10 power magnifying glass are open, distinct and can

be counted readily, the wood is red oak. If pores are closed, indistinct and difficult to count, the wood is white oak.

2. Examine under the magnifying glass the flat surface of a piece of freshly planed but not sanded oak. In the pores of white oak a glistening amber-colored substance, called tyloses, will be present, whereas little or none of this substance will appear in red oak.
3. Smoke can be blown through a piece of red oak eight inches long. This is not possible with white oak.
4. In white oak the medullary rays or quartered flakes are longer.

### APPALACHIAN WHITE OAK

While there are many species of white oak the most important, from a quality standpoint, is the genuine white oak known botanically as *Quercus alba*. It is found over most of the eastern part of the United States, but it makes its best growth on the deep well-drained soils in the mountains of the APPALACHIAN hardwood region. APPALACHIAN white oak is a ring porous wood, and has very prominent rays radiating from the center of the tree. While it is a relatively hard, heavy wood weighing about 4 pounds per board foot when kiln dried, APPALACHIAN white oak is somewhat lighter, softer, and more uniform textured than white oak grown in other localities.

As for woodworking qualities, it is well above the average of other hardwoods in planing, turning, boring,



mortising, sanding and bending following steaming. APPALACHIAN white oak is especially well adapted to this type of milling due to the fine grain and uniform texture and relatively thin cell walls which the growing conditions found in the APPALACHIAN region create in the wood.

## APPALACHIAN RED OAK

There are also several species of red oak to be found throughout the eastern part of the United States. However, the genuine red oak known botanically as *Quercus borealis* is the most important in the APPALACHIAN region, where it makes its best growth. Red oak is similar to white oak in that it is a ring porous wood with very distinct rays. APPALACHIAN red oak is not quite as hard or as heavy as white oak. It is a relatively fast growing wood, and as a result, the grain pattern is somewhat more pronounced than that found in white oak. APPALACHIAN red oak gives excellent results when processed



*Appalachian Red Oak Plank Flooring*

through woodworking machinery in turning, planing, boring, mortising, and also in bending following steaming, and is well above the average of other hardwoods for these uses. APPALACHIAN red oak, like APPALACHIAN white oak, is not quite as heavy as the same species grown in other localities. APPALACHIAN red oak has excellent nail and screw-holding properties, and finishes beautifully.

When we were cutting our virgin timber stands, oak was often sawn to produce distinctive grain patterns called quarter-sawn oak or comb-grained oak. In our present day timber stands few trees grow to a size from which this material can be readily produced. Therefore, while little of this type of sawing is done today and such grain patterns are only occasionally developed, a few mills are still producing it.

However, our second growth timber stands have other properties which have been imparted by nature which



*Appalachian Chestnut Oak Doorway Showing the Beauty of Natural Markings*

give oak outstanding character. The architect, the millworker, the builder or the manual training student has an excellent opportunity to make use of these natural properties in designing or making many of his products. Through knots, bird pecks, worm holes and other natural properties, the user has an opportunity to put his own characteristics and personality into his work.

*Appalachian White Oak Paneling and Closet Doors. Natural Markings create interest*







Natural marked  
Appalachian Chestnut  
Oak is beautiful

## APPALACHIAN CHESTNUT OAK

Chestnut oak is known botanically as *Quercus montana* which means oak of the mountain. It is a fitting name. This rugged sentinel of the ridge tops grows throughout the APPALACHIAN hardwood region where it makes its best quantity and quality growth on the higher elevations. While in the past chestnut oak was cut only occasionally, due to the inaccessibility of its range, modern equipment is now harvesting this ridge top timber and producing it along with other species. In some sections of the country the very heavy bark of the chestnut oak is peeled and sold to tanneries for the purpose of extracting tannic acid used in tanning leather.

### PROPERTIES OF THE WOOD

APPALACHIAN chestnut oak grows under very severe conditions of wind and weather, and must scratch out an existence from the thin rocky soils of its natural habitat. However, adversity builds character and chestnut oak is no exception. The smooth, hard knots, the interesting mineral streaks, the unique design of the worm hole patterns blended into the irregular and pronounced but quiet grain all make for an outstanding wood well adapted to the modern trends and designs.

APPALACHIAN chestnut oak is relatively hard and heavy, weighing about four pounds per board foot when kiln dried. The heartwood is grey to tan in color. The wood is easily worked, takes an excellent finish and has outstanding nail and screw holding properties. APPALACHIAN chestnut oak is outstanding in natural markings, and gives the user a wonderful opportunity to put his own character and ideas into his work.



The chestnut oak is a unique species embodying the properties of several others. It has the leaves of the Chestnut tree, therefore its name; its wood has the color of white oak but the texture and grain pattern of red oak. When one wants the durability of chestnut, the beauty of white oak, and the character of red oak, he specifies APPALACHIAN chestnut oak.



# APPALACHIAN HARDWOODS IN THE HOME



*Natural Markings in Appalachian Hardwood Paneling and Flooring create added interest*

*Appalachian Chestnut Oak Paneling and Flooring*



*Appalachian Butternut Paneling*



*Appalachian Butternut Paneling Oak Overhead Timbers*



*Appalachian Red Oak Paneling*



*Painted Appalachian  
Yellow Poplar  
Paneling.  
Well adapted to  
many colors.*



## APPALACHIAN YELLOW POPLAR

Yellow poplar is known botanically as *Liriodendron tulipifera* which means lily tree bearing tulips. Thus in many localities it is called tulip poplar because of the large tulip-like flowers that appear on the tree in the spring.

Yellow poplar grows throughout most of the eastern part of the United States. However, it makes its best growth in size of trees and quality of wood in the deep-well-drained soils in the coves and lower slopes of the mountains in the APPALACHIAN hardwood region. In the virgin timber stands trees of 4-6 feet in diameter with a height of over 100 feet were common. Today, in our second growth stands, it is economically impractical to grow trees of such size, and timber operations are now cutting trees with a diameter of 20-30 inches.

### PROPERTIES OF THE WOOD

APPALACHIAN yellow poplar is one of the most serviceable and dependable of woods found in the United States. It has been prized as a superior building material since early colonial days. In many of the early plantation mansions, yellow poplar was used extensively for weather boarding, porch columns, and interior trim and paneling.

The wood of APPALACHIAN yellow poplar has a straight close fine grain and uniform texture. It is moderately strong and light weight, weighing about 2½ pounds per board foot when kiln dried. The heartwood is greenish yellow in color while the sapwood is almost white. In our second growth timber stands, the trees produce a higher percentage of sapwood than was found in the virgin timber. APPALACHIAN yellow poplar

is unexcelled from the standpoint of being easily worked. The ease with which it can be seasoned, surfaced and turned into desired shapes and sizes with smooth surfaces and edges, together with the ability to retain its shape and dimension after being milled, have made it one of the choice woods for cabinets, pattern stock, paneling and veneer cores.

APPALACHIAN yellow poplar is free of resins, and ranks very high in glue-holding properties. Its fine grain and diffuse porous structure absorbs glue evenly, resulting in strong joints. The same properties also make it an excellent wood for painting or enameling. Its smooth surface takes and holds paints better than any other wood.

APPALACHIAN yellow poplar is an excellent wood for industrial arts and vocational training classes. It is easily worked with both hand and power tools. It is an excellent wood for the beginner in the manual arts course.



*Natural Finish Appalachian Yellow Poplar Paneling.*





*The Golden Beauty of Appalachian Beech Floors is outstanding*

## APPALACHIAN BEECH

Beech, known botanically as *Fagus grandifolia*, grows extensively throughout the APPALACHIAN hardwood region. It grows principally at the lower elevations of the mountains. The species often grows in pure stands and in looking at heavy stands of beech timber against the mountain side, one can often see a "beech line" above which only scattered beech trees grow. Due to the thin bark of the beech trees they have been seriously damaged by the fires that have burned through the forest over the past years.

APPALACHIAN beech is a wood that has only recently come into its own as a marketable tree. With the development of new techniques in drying, and wood-working machinery, the excellent properties of beech, so desirable for many uses, can now be realized.

A combination of strength, resistance to wear, durability and excellent working and finishing properties make APPALACHIAN beech a most desirable and useful wood for a variety of purposes.

### CHARACTERISTICS OF APPALACHIAN BEECH

APPALACHIAN beech is a hard, strong, diffuse porous wood with a fine uniform texture and a delicate grain pattern. In the log a narrow light-colored ring of sapwood surrounds the golden brown heartwood that is

susceptible to many attractive finishes. The uniform golden color of the heartwood makes beautiful furniture and flooring. Beech seasons and machines well and readily takes a lustrous polish. These qualities make it highly suitable for wood products in which accuracy of manufacture and smoothness are essential. Moreover, the excellent shock resisting and nail and screw holding properties of APPALACHIAN beech make it highly desirable for the manufacture of furniture, flooring, playground equipment, sporting goods, household articles, boxes, crates, toys, and many other products. It give excellent service in flooring in gymnasiums and commercial buildings.

The color and grain pattern of APPALACHIAN beech, especially in the heartwood, makes furniture and flooring of unexcelled beauty.

When beech lumber is sawn from logs, a large amount of so-called low grades result. Grade is a relative term with clear lumber being the high grade and boards with knots and other natural markings being called low grade. However, this does not mean that clear boards are always the best for all uses. The architect, the mill worker and the manual training student will do well to study the grain and character of boards with knots and other markings and use his ingenuity in working these characteristics into designs of beauty in the products that he makes.





*Appalachian Hardwood Paneling lends distinction and dignity to a beautiful home*

## APPALACHIAN HARDWOODS

APPALACHIAN hardwoods, like all hardwoods are graded according to the rules of the National Hardwood Lumber Association. Since most hardwood is manufactured into flooring, furniture, paneling and other relatively small products, the grades are designed to give the percentage of clear cuttings that can be obtained from a board. However, grades of lumber tell only part of the story. They do not define texture, evenness and fineness of grain, properties which make for ease of kiln drying, working and finishing, and the important economies resulting therefrom. These desirable properties long recognized and sought by manufacturers of furniture, flooring, paneling and other wood products of beauty are a quality bonus imparted by nature to hardwoods grown in the APPALACHIAN hardwood region.

Hardwood is of two different types. One is known as ring porous wood, the other type is known as diffuse porous. The name is derived from the variation in cell structure between the springwood and summer wood.

In ring porous wood the springwood cells are much larger than those found in the summer wood, and form a distinct line of demarcation between the two growing periods. Examples of ring porous woods are the oaks, ash and hickory.

In diffuse porous wood the springwood cells are similar in size or only slightly larger than the summerwood pores and the line of demarcation is indistinct or absent. Examples of diffuse porous woods are yellow poplar, sugar maple, cherry, basswood, beech and birch.

APPALACHIAN hardwoods are distinctive in many ways. They are easily processed through woodworking machinery. They are kiln dried with a minimum of degrading and damage. The thin cell walls reduce swelling and shrinking to a minimum with changes in relative humidity, and the fine grain uniform texture and natural markings, impart a beauty to the finished product which is unsurpassed.





*Appalachian Red Oak as nature intended it . . . warm, beautiful, homey. Natural marked plank flooring adds beauty and interest to the home.*

## APPALACHIAN HARDWOOD USES

The inherent characteristics imparted to wood by nature lend warmth and beauty to its surroundings. Such warmth and beauty in a wood-paneled room or a wood-covered floor makes for homey living. Looking at a wood-paneled room is like looking at a fire in an open fire place. The grain pattern and the markings imparted by nature, offer a certain fascination that never grows old. Many products can be used to make a house. When wood is used, it adds warmth and beauty and becomes a home.

Paneling and flooring are available in many patterns and types. When wood having worm holes, knots, bird pecks and other such markings are blended into the grain pattern and color of the wood, the result is a pleasing and beautiful effect.

### FINISHES FOR APPALACHIAN HARDWOODS NATURAL FINISH.

Woods such as oak, ash, maple, cherry and others with distinctive color and grain patterns as well as outstanding natural markings should have these characteristics protected. After planing and sanding the piece to a smooth surface, the application of two coats of a good grade of wax will impart a beautiful finish and protect the character of the wood.

### PAINTED SURFACE.

On woods such as yellow poplar which are so well adapted to painting, the finish can be accomplished in this manner. The ability of a wood to take stains, laquers, varnishes, paints and hard enamel finishes, depends largely upon its uniformity of growth and texture. APPALACHIAN yellow poplar excels in its finishing properties, because it is moderately soft, of fine and even texture, and of very uniform growth. Also the wood is of a non-resinous structure and is free of dense bands of summerwood. A good paint or enamel finish adheres tightly to the wood, and it does not check or flake off, because there is practically no shrinking, swelling, checking or warping of the wood.

Successful painting depends not only on the properties of the wood but on the methods of preparing the wood to properly receive the paint:

- a. Smooth the surface of the wood with very fine sand paper.
- b. Clean the surface with a soft cloth to remove any sanding residue.
- c. Apply one coat of clear turpentine.
- d. Apply a coat of paint or enamel evenly over the surface.
- e. Apply second coat if needed.
- f. In repainting painted or enameled surfaces, it is important to use the same kind of paint as that used in



the original job; sometimes different types of paint have different chemical components which react with each other and cause checking or flaking.

How to insure getting APPALACHIAN hardwoods when ordering.

The fine grain and uniform texture of APPALACHIAN hardwoods are outstanding properties which insure ease of working, "staying put" when placed in use, and outstanding beauty.

To insure receiving APPALACHIAN hardwood the word APPALACHIAN should precede the name of each wood specified such as APPALACHIAN white oak, APPALACHIAN yellow poplar, etc.

The use of the term APPALACHIAN is permissible in most specifications on Federal and State projects. When it cannot be used, APPALACHIAN hardwood can be obtained by means of *description* and use of samples which are readily obtainable.

THE APPALACHIAN HARDWOOD MANUFACTURERS, INC., are eager to cooperate with architects, through mill-work concerns and other distributors of hardwoods to supply quality APPALACHIAN hardwoods to the consumer.

## OTHER SPECIES OF APPALACHIAN HARDWOODS

Many other species of APPALACHIAN hardwoods are available for the many uses to which they are so well adapted. Ash, cherry, basswood, chestnut, birch, represent a few. In the manufacture of furniture, wood paneling, flooring and home building, each has its qualities which fit the character of the user. All are fine-grained and uniform in texture and color. Each has its own color, grain pattern, and natural markings which can be adapted to the surroundings in which it will be placed.

## HARDWOOD LUMBER GRADES

Nearly all hardwood lumber is graded according to the rules which have been established by the National Hardwood Lumber Association. There are many grades covering specific items and species. However, the two general grades on which most hardwood is shipped are the cutting grades designed to show the amount of clear or sound wood in a board, and the industrial grades designed to describe a board which can be used "as is" for industrial and structural purposes.

Since hardwoods are used principally for flooring, furniture, interior trim and other such items, the cutting grades have a wider use. These are generally and briefly described as follows. It should be noted, however, that the sound clear portion of a No. 2 common board is exactly the same as the sound clear portion of a first and seconds. Cutting grades are named as follows:

First and second, selects or 1 face, No. 1 common, sound wormy, No. 2 common, No. 3A common and No. 3B common. All boards except those in the select or 1 face grade are graded on the poorest side of the board. Select and 1 face are graded on the best side.

### 1. First and seconds = FAS.

Boards admitted into this grade must be 83⅓% to 100% clear, and must be at least 6" wide and 8' long. Seventy per cent of the lengths must be over 11 feet.

### 2. Selects or 1 face = Sel or 1 FAS.

Boards admitted in this grade must be 91⅓% to 100% clear on the best face and at least No. 1 common as described below on the other face. Boards must be at least 4" or wider and 6' and longer. Seventy percent of the lengths must be over 11 feet.

### 3. No. 1 common = 1C.

Boards admitted in this grade must be 66⅔% to 83⅓% clear, and must be at least 4' long and 3" wide, 90% of the lengths must be over 7 feet.

### 4. No. 2 common = 2C.

Boards admitted in this grade must be 50% to 66⅔%



Painted Yellow  
Poplar Paneling



clear and at least 3" wide and 4' long, with 70% of the lengths over 7 feet.

5. Sound wormy = SW.

Sound wormy is the same as No. 1 common except that worm holes, bird pecks, stain and sound knots not over  $\frac{3}{4}$  of an inch in diameter are admitted in the otherwise clear part of the board.

6. No. 3A common = 3A.

Boards admitted in this grade must be 33 $\frac{1}{3}$ % to 50% clear, and at least 3" wide and 4 to 16' long with 50% of the lengths over 7 feet.

7. No. 3B common = 3B.

Boards admitted in this grade must be 25 to 33 $\frac{1}{3}$ % sound and at least 3" wide and 4 to 16' long with 50% of the lengths over 7 feet.

The definitions of these grades are only general, but indicate the general appearance of the boards in the various grades.

Except for such species as yellow poplar, cherry and walnut, where the amount of sapwood is considered in the grades, color is not a consideration unless uniform color is specified in ordering the lumber.

## USES OF LUMBER ACCORDING TO GRADES

Most lumber is graded on the basis of the percentage of clear wood that exists in a board. However, for many uses such as paneling, furniture, small items of the wood-working shop such as bookends, coffee tables, gun racks, etc.; knots, worm holes and other features of character and beauty will add to the appearance of the piece.

People buying wood should take advantage of these natural markings in putting wood to its best use.



FAS Saps Sel 1C 2A 2B  
Appalachian Yellow Poplar



FAS 1FAS 1C SW 2C 3A  
Appalachian Red Oak



FAS 1FAS 1C 2C 3A  
Appalachian Beech

### CUTTING GRADES APPALACHIAN HARDWOOD LUMBER



## HERE IS HOW TO MAKE IT

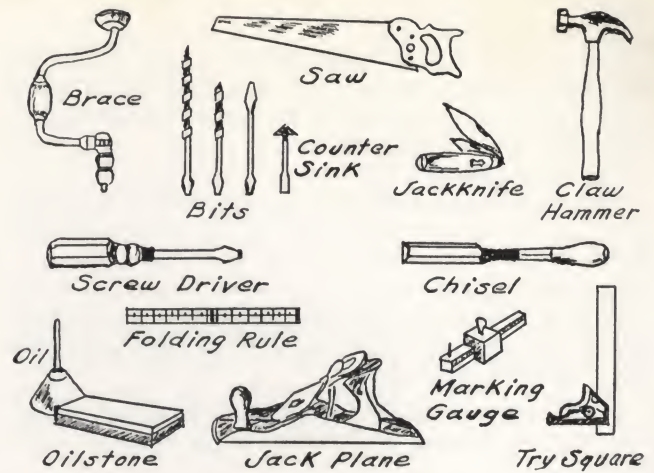
Many items of simple construction, but with considerable utility value can be made of wood by the home craftsman or the manual training student.

APPALACHIAN hardwoods are well adapted to such use and the best kind to use depends upon the experience and skill of the builder, the type of finish desired and the surrounding in which the finished product will be placed.

APPALACHIAN yellow poplar is an excellent wood for the beginner. It is easily worked, has a pleasing though not striking appearance and its natural color or excellent paintability make it well adapted for most surroundings. It is also an excellent wood for interior parts such as drawer sides and bottoms.

Some of the harder woods such as APPALACHIAN red oak, white oak, chestnut oak, beech or maple have very distinct appearance, grain patterns or color, and opportunities for finishing which are a challenge to the craftsman. The small amount of increased effort required to work the harder woods is amply rewarded in the beauty of the finished product. The natural markings of knots, wormholes, bird pecks and streaks often found in wood offer the individual an excellent opportunity to express himself in the designs and patterns he can develop in the natural wood.

Basic tools are hammer and saw, but if he's really going to enjoy woodwork and turn out a piece of carpentry of which he is proud, he should have a basic kit.



The tool board shown above consists of items which even the beginner will want. Later on, he may expand and even move into power tools.

Unless you know tools, it is best not to trust your own judgment. Take the list to your hardware dealer and let him help you select the best tools for home use.

Cheap tools are often the most expensive in the long run. If the budget is limited, it is far better to purchase one or two really good tools than to waste money and the handyman's patience with shoddy stuff.

## WHAT TO MAKE?

### Table Desk.

A simply constructed table desk can be made of wood with just a few tools and skills. To start, construct a rigid frame "B" all of 1" x 4" material, both glued and screwed together for rigidity. Frame section "C" calls for sawing out the corners to accommodate the legs, cutting the slots with saw and chisel for the drawer rails. APPALACHIAN yellow poplar is excellent for this part although other woods are also well adapted.

When B is glued to C and drawn tightly together with screws, the legs fit into the corners as shown in D and F.

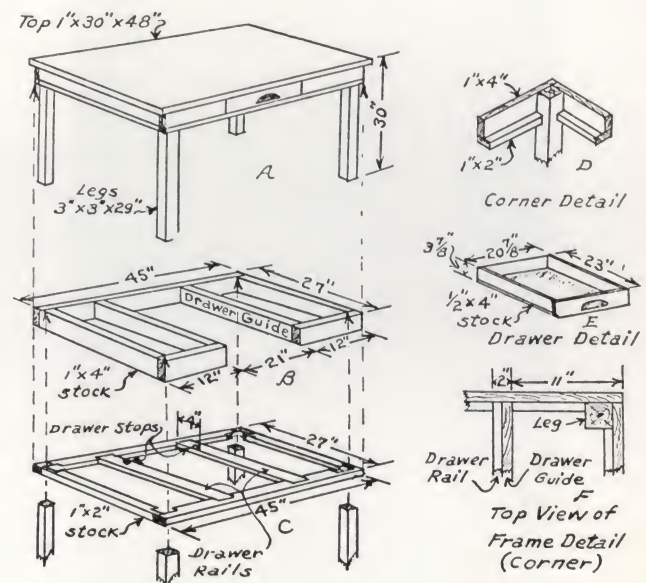
The table desk top may be of 1" or 2" material; any of the harder APPALACHIAN woods will make an excellent top.

The top is fastened either by screws from the top or right angle brackets from beneath and has a 1½" overhang all around.

Bill of material, Table Desk:

#### Lumber:

1 piece.....	1" x 4" x 16'
1 piece.....	1" x 4" x 10'
1 piece.....	3" x 3" x 10'
1 piece.....	1" x 12" x 8'
1 piece.....	1" x 6" x 6'
2 pieces.....	½" x 4" x 10'

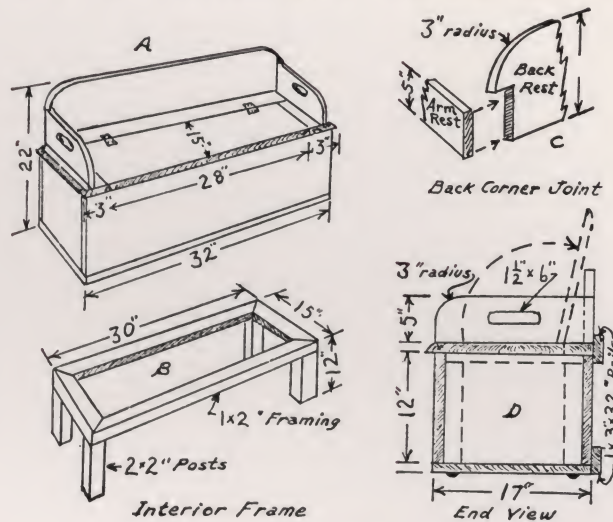


#### Hardware and other material:

Screws 1½" x 9 FH wood Bright—50.  
Glue—casein ½ lb.  
Brads wire ¾"—1 small box.  
Handle for drawer.



## HOW TO MAKE TOY CHEST BENCH



**Toy Chest Bench.**

The methods of construction and the necessary tools for the Toy Chest Bench are similar to those for the Table Desk. With experience gained in making the table desk out of APPALACHIAN Yellow Poplar, some of the harder or heavier woods can be used to make the Toy Chest Bench such as APPALACHIAN Oak or Sugar Maple or Beech.

Bill of material, Toy Chest Bench:

Lumber:

- 1 piece.....1" x 12" x 12'
- 1 piece.....1" x 6" x 6'
- 1 piece.....1" x 2" x 8'
- 1 piece.....2" x 2" x 4'
- 1 piece.....1" x 6" x 10'

Hardware:

- Hinges 2" Butt—2.
- Screws 1 1/2" x 9 FH wood Bright—50.

(National Lumber Manufacturers Association)







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